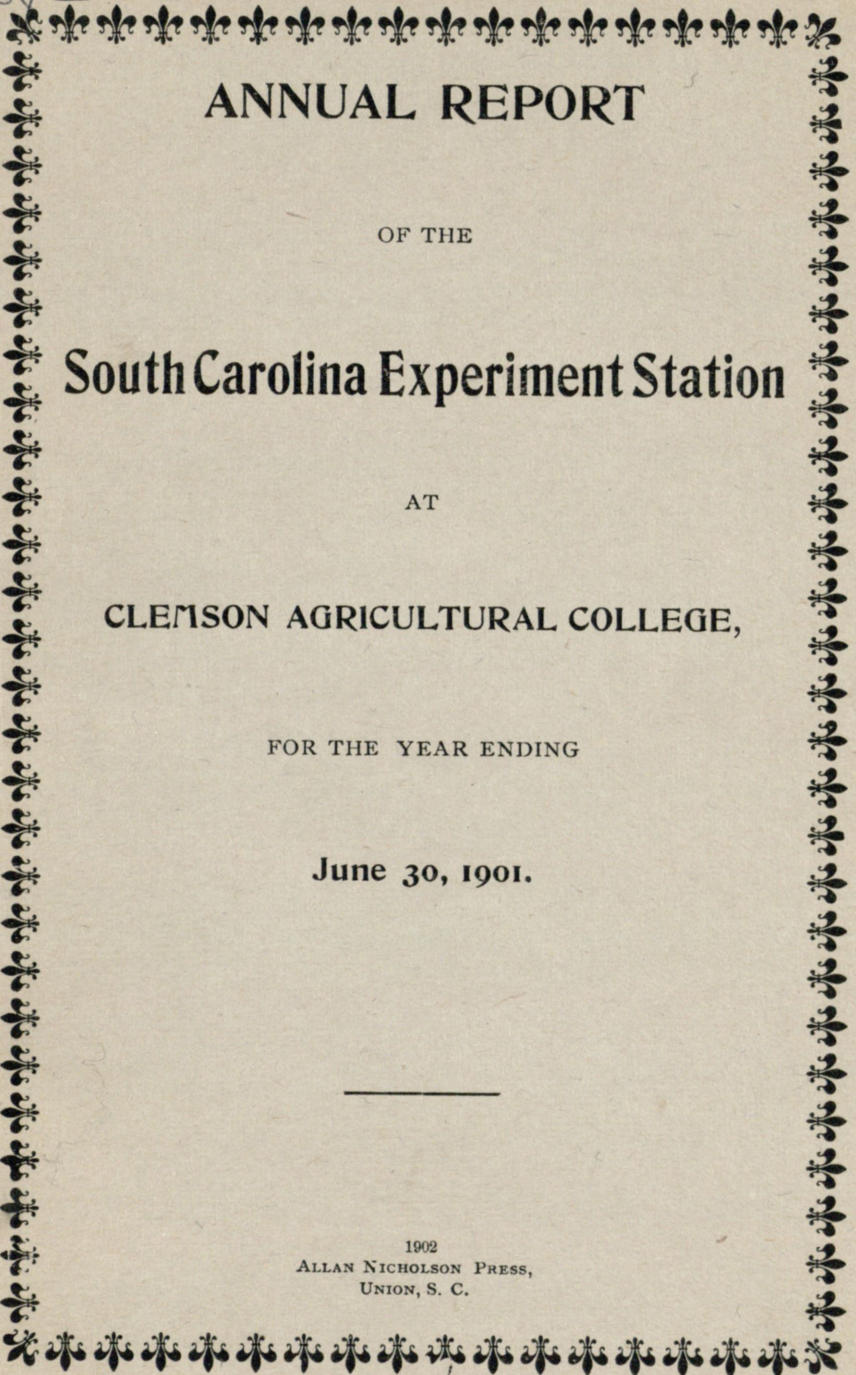


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# ANNUAL REPORT

OF THE

## South Carolina Experiment Station

AT

### CLEMSON AGRICULTURAL COLLEGE,

FOR THE YEAR ENDING

June 30, 1901.

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1902

ALLAN NICHOLSON PRESS,  
UNION, S. C.

# ANNUAL REPORT

OF THE

## South Carolina Experiment Station

AT

CLEMSON AGRICULTURAL COLLEGE,

FOR THE YEAR ENDING

June 30, 1901.



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## OFFICERS OF EXPERIMENT STATION.

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Henry S. Hartzog, L.L.D., President of College.....	Director
J. S. Newman.....	Vice Director and Agriculturist
M. B. Hardin.....	Chief Chemist
F. S. Shiver, Ph. G.....	Assistant Chemist
C. C. Newman, Assistant in Charge.....	Horticulturist
R. N. Brackett, Ph. D.....	Assistant Chemist
G. E. Nesom, B. Sc., D. V. M.....	Veterinarian
*C. C. McDonnell, B. S.....	Assistant Chemist
P. H. Rolfs.....	Botanist and Bacteriologist
C. M. Conner, B. S.....	Assistant Agriculturist
A. P. Anderson, Ph. D.....	Entomologist
*B. F. Robertson, B. S.....	Assistant Chemist
J. S. Pickett.....	Foreman

John N. Hook, Secretary and Librarian

\*Engaged in Fertilizer Analyses.

## LETTER OF TRANSMITTAL.

Hon. M. B. McSweeney, Governor of South Carolina :

Dear Sir: I have the honor to submit herewith the annual report of the South Carolina Experiment Station for the year ending June 30, 1901.

Respectfully submitted,

HENRY S. HARTZOG,

Director.

Clemson College, S. C., January 20, 1902.



## Report of Agriculturist.

To Dr. Henry S. Hartzog, Director :

Dear Sir : The following report of work, completed and in progress, in the Agricultural Division for the fiscal year ending June 30th, 1901, is respectfully submitted.

### EXPERIMENTS COMPLETED.

*Wheat Following Nitrogen Collectors and Nitrogen Consumers:* After growing corn, sorghum, teosinte, peas and velvet beans on the same plots two years, wheat was sown on all of the plots. Results showed that the legumes supplied all the nitrogen needed by the wheat.

*Varieties of Wheat:* Comparison of a large number of the most popular varieties resulted generally in favor of those which are acclimated in this latitude.

*Fertilizers for Sweet Potatoes:* Comparison of potash derived from different sources in combination with other standard ingredients have not sustained the common theories on this subject.

*Fertilizers for Cotton:* Experiments have been conducted for a series of years with results indicating that phosphoric acid is the principal element needed on this soil.

*Varieties of Sorghum* have been compared for two years testing the percentage of saccharine matter as determined by chemical examination and the actual yield of syrup from each variety.

*Varieties of Corn:* Standard varieties from the Middle States and those long grown in this latitude have been compared.

*Hops:* An effort to grow this crop proved unsatisfactory on account of the destructive attack of a fungous disease.

*Forage Plants:* A comparison of a large number of forage crops suggests teosinte as the most promising for green soiling and fodder production. Results of these experiments will be published in bulletin form.

### EXPERIMENTS IN PROGRESS.

*Varieties of Cotton:* Standard varieties have been com-

pared during three years and these were compared last summer with some cross-bred and hybrids which have resulted from *Artificial Plant Breeding*. This work, commenced in 1898, is still in progress. Some important developments have resulted which encourage its continuance. Hybrids are usually very promising the first year but confusing in the second and third reproductions.

*Corn Culture* has been under experiment during two seasons peculiar in meteorological conditions. This will be continued.

*Nitrogen Experiments* with corn require further investigation for reasons stated in regard to its culture.

*Grass Garden*: A large number of varieties of grasses and legumes, sown singly and in various combinations, constitutes the grass garden. These, according to their habits of growth, are cultivated for lawns, pasturage or hay. Some native species are thus far very promising.

*Hog Crops*: These have been subjects of investigation for several years under unsatisfactory conditions. It is proposed to continue experiments with varieties of swine with the growing of crops which can be harvested by the hogs, using movable fences for this purpose. This will be continued and developed as rapidly as the necessary means for conducting it are supplied.

*Evaporating the Sweet Potato*: To avoid the annual loss in this important crop an investigation of means of preparing the potato as well for home use as for transportation to distant markets so as to avoid the rot and put them into condition to be kept indefinitely, was commenced three years ago in evaporating the potato. Results already obtained give promise of rendering the sweet potato an important article of domestic and foreign commerce.

This division is co-operating with the U. S. Department of Agriculture by testing varieties of plants, which promise useful additions to those already grown.

The usual Institute work was performed during the College vacation.

#### POULTRY DIVISION.

Mr. O. M. Watson has been striving faithfully, under



many difficulties, to organize the division for experiment work but having taken charge late in the spring of 1900, no experiments have been brought to a conclusion. He issued an instructive popular bulletin on "Capons and Caponizing," and proved a successful and efficient Institute worker. Experiments in progress are:

- (a) Comparison of different breeds in egg production.
- (b) Comparison of fertility of the eggs of different breeds subjected to same treatment.
- (c) Comparison of different breeds for production of early broilers.
- (d) Comparison of grades from the thoroughbreds of different breeds as producers of broilers.

Respectfully submitted,

J. S. NEWMAN,  
Agriculturist.

## Report of Assistant Agriculturalist.

Clemson College, S. C., Jan. 20, 1902.

Dr. H. S. Hartzog, Director,

Dear Sir: I have the honor to submit herewith the report, of the Division of Live Stock and Dairy, for the fiscal year ending June 30, 1901.

The work of this division has been carried out according to the plans given in the last report, so far as possible.

The work, of collecting data relating to the comparative value of the different breeds of cattle for dairy purposes, was continued up to the first of March, when the work was stopped and the results tabulated. These data will be published, together with such other information, as will be of interest to the stock breeders.

The experiment, to test the relative feeding value of cotton seed hulls and corn stover, has been completed so far as the material on hand would permit. This bulletin is now in the hands of the printer.

During the summer several weeks were spent attending

Farmers Institutes at which talks were given on stock raising and dairying.

Respectfully Submitted,

C. M. Conner,  
Assistant Agriculturist

## Annual Report State Chemist.

Clemson College, S. C., July 15, 1901.

President H. S. Hartzog, LL. D., Director of the South Carolina Experiment Station.

Sir: I respectfully submit the following report of the Chemical Department of the Station for the year ending June 30th, 1901:

### I.

The following work has been completed and published: *The Rice Plant and Its Products*, by Mr. C. C. McDonnell, Bulletin 59.

*The Sweet Potato*, by Mr. F. S. Shiver, Bulletin 63. In this Bulletin is included the work of Mr. McDonnell referred to in my last annual report. This Bulletin is intended to supplement Bulletin 28 of this Station on the sweet potato as a starch producer, and has reference to the changes in chemical composition which the sweet potato undergoes during storage, the relative value of different methods of storing, and the effect produced on the starch content of the potato by fertilizing with different potash compounds.

Mr. Shiver has in progress an investigation of the *Tea Industry in South Carolina*, and has nearly finished writing up the results of his work on the Sea Island Cotton Seed.

With regard to the *rotation experiment* begun in conjunction with the Agricultural Department of the Station in 1896, and completed so far as the field work was concerned in 1899, I would say that notwithstanding the untoward circumstances which have occurred and the unfortunate suspension of the analytical work due to the protracted illness of Mr. Shiver, it is still hoped that something of interest may be derived from



the results of the numerous analyses of soils and crops which have been made in this connection. Too much careful analytical work has been done to abandon the investigation entirely, and Mr. Shiver reports that he hopes to have the results he has obtained in shape for publication by the first of next year.

The experiments with acid phosphates containing small quantities of free sulphuric acid are being continued, the field work being conducted by the Agricultural Department of the Station.

The following *miscellaneous and routine analyses* have been made during the year.

12 samples of sorghum juice, 1 sample of artichokes, one of teosinte, 1 of chufas and 1 of "evaporated" sweet potatoes for the Agricultural Department of the Station by Mr. Shiver, and one sample of rice meal from Waverly Mills, S. C., by Messrs. Shiver, McDonnell and Robertson.

## II.

### STATE ANALYTICAL WORK.

Following is an account of the work on commercial fertilizers, drinking water, minerals, ores, &c., done at the Station under the direction of the Board of Fertilizer Control.

#### SUMMARY OF THE WORK.

	Year ending June 30, 1900.	Year ending June 30, 1901.
Official samples of fertilizers.....	328	335
Farmers' samples of fertilizers.....	19	41
Waters.....	89	58
Marls.....	2	4
Ores and Minerals.....	17	23
Clays.....	6	8
Miscellaneous.....	8	8
	<hr/> 471	<hr/> 477

#### OFFICIAL SAMPLES OF FERTILIZERS

The number of samples analyzed this year is 335. The analyses are given in full in Bulletins 60 and 64 of this Station.

## CLASSIFICATION.

	1900	1901
Complete fertilizers.....	124	139
Acid phosphates.....	73	56
Acid phosphates with potash.....	63	55
Kainits .....	8	12
Cotton seed meals.....	52	60
Nitrate of soda.....	3	3
Sulphate of potash.....	0	2
Muriate of potash.....	4	2
Manure salt.....	0	1
Nitrate of soda with potash salts.....	1	1
Dried blood .....	1	0
Fish scrap.....	1	0
Tankage .....	0	2
Miscellaneous.....	0	2
	<hr/> 330	<hr/> 335

## DEFICIENT SAMPLES.

Of the 335 samples analyzed, 12 *were deficient under the law*, that is their commercial value based upon analysis fell 3 per cent. or more below the commercial value based upon guarantee.

In addition to these, there were 57 samples which fell below guarantee in or more constituents as follows:

In available phosphoric acid and potash.....	2
In potash and ammonia.....	5
In available phosphoric acid.....	7
In ammonia.....	19
In potash .....	24

The extent to which these fell below guarantee is shown in the following table:



	Below Guarantee—Per Cent.				
	0 to .1	.1 to .25	.25 to .50	.50 to 1.	1. and over
In ammonia .....	5	6	9	4	0
In avail. phos. acid.....	1	2	4	1	1
In potash.....	5	9	11	5	1
Total .....	11	17	24	10	2

In these samples the deficiencies were made up in money value by an excess of other constituents and hence these fertilizers do not fall under the ban of the law. It is, however, not simply a matter of dollars and cents, with the farmer, but a question of pounds of ammonia, phosphoric acid and potash. It is obviously not right when a farmer pays for 60 pounds of ammonia that he should be furnished with only 40 pounds and have the money deficit made up to him in phosphoric acid and potash.

## AVERAGES OF ANALYSES.

	1900		1901	
	Per Cent.		Per Cent.	
	Found	Guaran.	Found	Guaran.

## ACID PHOSPHATES.

Soluble phosphoric acid.....	10.00	.....	10.18	.....
Reverted phosphoric acid.....	3.58	.....	3.82	.....
Available phosphoric acid.....	13.58	12.58	14.00	13.02
Insoluble phosphoric acid.....	1.24	.....	1.30	.....
Total phosphoric acid.....	15.00	.....	15.30	.....

## ACID PHOSPHATES WITH POTASH.

Soluble phosphoric acid.....	8.17	.....	6.62	.....
Reverted phosphoric acid.....	3.41	.....	4.87	.....
Available phosphoric acid.....	11.58	10.48	11.49	9.98
Insoluble phosphoric acid.....	1.31	.....	1.22	.....
Total phosphoric acid.....	12.89	.....	12.71	.....
Potash soluble in water.....	2.00	1.84	2.65	2.42

## COMPLETE FERTILIZERS.

Soluble phosphoric acid.....	6.58	.....	6.46	.....
Reverted phosphoric acid.....	2.92	.....	2.94	.....
Available phosphoric acid.....	9.50	8.19	9.40	8.09
Insoluble phosphoric acid.....	1.76	.....	1.60	.....
Total phosphoric acid.....	11.26	.....	11.00	.....
Ammonia.....	2.73	2.59	2.87	2.74
Potash soluble in water.....	2.13	1.85	2.47	2.19

## COTTON SEED MEALS.

Available phosphoric acid.....	2.27	1.64	2.38	1.57
Ammonia.....	8.73	7.46	8.55	7.54
Potash soluble in water.....	1.63	1.00	1.54	1.00

## KAINIT.

Potash soluble in water.....	12.73	12.00	12.61	12.17
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## MURIATE OF POTASH.

Potash (equivalent).....	50.95	51.25	48.92	49.00
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## SULPHATE OF POTASH.

Potash.....	.....	.....	49.43	46.50
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## SODIUM NITRATE.

Ammonia (equivalent).....	19.01	18.00	18.96	18.00
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The available phosphoric acid and potash in the cotton seed meals were guaranteed in only fourteen samples, but these ingredients were determined in all cases :

### GRADES.

In the following table the number of acid phosphates and complete fertilizers of each grade according to guarantee, is placed side by side with the number found by analysis to belong to that grade.

	High.		Standard		Low	
	Claimed	Found	Claimed	Found	Claimed	Found
Complete fertilizers .(139)	46	75	77	60	16	4
Acid phosphates.....(50)	44	48	12	8	.....	.....
Acid phos. with potash (55)	13	48	42	6	.....	1
Total .. .....(250)	103	171	131	74	16	5

These results are due to the following changes in grade ascertained by analysis :

Change.	Low to Standard	Standard to High	Low to High	High to Standard	Standard to Low	High to Low	No Change
Complete fertilizers.....(130)	8	4	26	2	1	.....	98
Acid phosphates.....(56)	.....	.....	8	.....	4	.....	44
Acid phos. with potash..(55)	.....	.....	35	1	.....	.....	19
Total .....	8	4	69	3	5	.....	161

This shows that out of 250 samples, 161 were of the grade claimed for them, 81 were of a higher grade, and 8 of a lower grade than that claimed for them.

### FARMERS' SAMPLES OF FERTILIZERS.

In addition to the official samples collected by the Inspector of the Fertilizer Department, there have been analyzed forty-one samples for citizens of the State. Persons wishing analyses made will be saved unnecessary trouble and expense by writing in advance to the Secretary of the Fertilizer Department at the college for copies of the Act of the

Legislature and of the Rules of the Board of Trustees concerning such work. The analyses cannot be made unless the law and the rules are complied with.

#### WATER.

Of the 58 samples analyzed, thirteen were from artesian wells, nine of which were flowing wells.

#### ORES, MINERALS AND OTHER SUBSTANCES.

Forty-three analyses and assays have been made, but the results are not of sufficient interest to be reported in detail.

#### DISTRIBUTION OF THE WORK.

The analyses of fertilizers were made by Messrs. McDonnell and Robertson; the analyses of waters, ores, minerals, etc., chiefly by Messrs. Robertson and Henry, though Dr. Brackett and Mr. McDonnell did a considerable amount of work, making use of all their available time for the purpose. It is with pleasure that I refer to the valuable services which these gentlemen have rendered the Department.

Very respectfully,

M. B. HARDIN,  
Chief Chemist.

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### Report of the Botanist.

Dr. H. S. Hartzog, Director:

Sir: Herewith I submit to you a brief report of the Division of Botany for the year ending June 30, 1901.

Respectfully yours,

P. H. ROLF,  
Botanist.

#### CORRESPONDENCE.

The letters of inquiry took wide range over the field of botany. Almost all the whole range being represented.



Some of the questions required considerable time to answer and others required some investigation.

In some cases this work is a loss of much time to the Division while in others this correspondence brings to us valuable information.

The inquiries regarding plant diseases are more frequent than formerly. They show the need of bulletins on these subjects.

#### THE LABORATORY.

The purchase of a new microscope has facilitated matters of investigation.

Much apparatus needed for investigation can be borrowed from the college when it is not being used by the classes for which it was purchased. This has added much to the facilities during the past year.

The addition of the camera stand and the microscope stand make it possible to produce illustrations for bulletins with the minimum outlay of time.

The most serious drawback to the use of the laboratory was found in that no heat could be secured during vacation and even during the college term the heat was not sufficient for comfort. The amount of radiator service being only one half that of the class-rooms in addition to the room being larger and ceiled in place of being plastered.

#### STUDENT LABOR.

The practice of securing the aid of students who are willing to work and who have a taste for botanical work has been continued. This has worked out most excellently during this year. In this way a number of students have become familiar with the routine of certain lines of work. Much of this student labor has been used in such a way that it will be of permanent value to the institution. Most of the work of preparing a mycological collection has been done by students. Also the work of making a card index of the fungi and the host plants, this is not complete.

In addition to the direct value of this work to the Experiment Station it will have an indirect value in fitting young men to take positions as assistants.

### SWEET POTATO ROT.

During the fall of 1900 the sweet potatoes suffered much from rotting after they had been gathered. This was made the principal line of investigation and considerable information of a technical nature has been obtained. Practical application can now be begun with considerable degree of confidence of success. With the proper application of the means at hand it seems probable that we will be able to preserve sweet potatoes with the same certainty that we preserve apples and Irish potatoes at a cost of only a few cents per bushel.

### DISEASES OF THE APPLE AND PEAR.

Careful observations of the diseases of the apple and pear have been made during the year and the greater portion of the work of preparing a bulletin on this subject was done during December and January.

### COTTON DISEASES.

The field observations have been continued but the difficulty of proceeding with thorough and practical investigation is the same as formerly, leaving this very desirable and inviting field still beyond reach.

Respectfully yours,

P. H. Rolf,

Botanist.

### Report of Veterinarian.

Dr. H. S. Hartzog, Director :

Since I have been connected with the South Carolina Experiment Station I have urged the necessity of work with the cattle disease known as Texas fever. The main features in dealing with this disease are to prevent the infection of cattle not immune to it and to immunize non-immunes when it becomes necessary to place them where they are liable to become infected with the disease.

The first feature named can be accomplished only by



quarantine and a judicious system of policing, and would not come within the province of the Experiment Station. On the other hand the inoculation of cattle not immune to Texas fever when it becomes necessary or desirable to place them where they come into contact with ticks (*Boophilus annulatus*) which are the conveyors of Texas fever, is a problem for experimental research. By this means many of the technical points regarding the disease are to be determined, and one point now paramount with cattle dealers in this State is the lessening of the disease among native cattle purchased for the feed lots. I am convinced that native cattle which have never carried ticks are just as much subject to Texas fever as if they had been raised in the North. With a view to determining this point I purchased in the vicinity of the Station twelve head of yearlings raised on farms free from ticks. These were inoculated in December 1900, with blood from an old cow carrying ticks. A careful record of the temperatures were kept and in due time all of them showed a temperature reaction, refused food and several became much debilitated. For lack of suitable apparatus, no blood tests were made. In May, 1901, these were put out in pasture where ticks were abundant and up to July 1, 1901, had shown no signs of taking the disease. When the observations are completed a bulletin will be published showing in detail the nature of work and results.

Another line of experimental work conducted is the hypodermic injection of Orecoline for flatulent and spasmodic colic in horses. During the year I have treated about twenty cases in this way and am very favorably impressed with the results. Not a single case thus treated has died and in most of them relief was very rapid. If given in small doses (half grain) the most marked action is to produce a profuse salivation. As the dose is increased the digestive secretions are more and more stimulated, peristaltic action increased and evacuation of bowels follows. In large doses it lowers heart action, renders breathing difficult, and produces profuse perspiration.

Samples of Pyoktauin blue dissolved in 200 parts alcohol have been sent out to several parties over the State for use in the treatment of sorehead (favus) in fowls. Few reports of its use are in yet, but the remedy seems to have been very successful in the cases reported.

During the summer of 1900 I lectured in some fifteen farm-

ers' institutes held in several counties of the State, but was prevented by sickness from participating in the one held at held at the College.

Respectfully submitted,

G. E. NESOM,  
Veterinarian.

Clemson College, Jan. 21, 1902.

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## Report of Horticulturist.

Dr. H. S. Hartzog, Director :

Dear Sir: I respectfully submit the following report of the Horticultural Division of the Station for the year ending June 30, 1901 :

*Peaches:* Forty-six varieties bore a crop of fruit this year, and has afforded an excellent opportunity for comparison of varieties. The crop, however, was not so good as in 1900, and on account of continuous rains, during the ripening period, the fruit did not develop, as well as it would have done under more favorable conditions. Specimen fruits have been preserved of nearly all the leading varieties, and are now on exhibition at the South Carolina Inter-State and West Indian Exposition at Charleston, S. C.

Experiments have been continued in spraying those varieties which are most subject to attack from fungus diseases. Many of our excellent varieties that are nearly always destroyed by disease can be grown to perfection when properly sprayed. Various fungicides have been tested in our experiments in spraying different fruits, but Bordeaux Mixture has continued to give the most satisfactory results.

*Apples:* During the last two years I have collected apple scions from seedlings that seemed specially promising, and have propagated quite a number of trees for trial in different sections of the State. Four of the seedlings are winter apples of fine quality and keep well until late in February, and one of these seedlings has been kept until June in good condition. Two of the seedlings are superior summer apples that are well worthy of cultivation. For the last four years notes



have been taken on forty-two varieties of apples and each year the fall and winter fruits have been stolen before they reached maturity. It is very discouraging to have valuable experiments ruined in this way and something should be done to protect them if possible.

*Pears:* The Garber is the only variety that has not been badly injured by blight. The trees of this variety are vigorous and well shaped and have borne full crops of fruit for the last four years. All of the other varieties have been cut back every year on account of the blight, and most of them have been killed to the ground. If this variety continues to be free from blight it will be a most valuable one.

*Plums:* Many varieties have been tested on these grounds, but the Wild Goose, Roberson, Burbank and Negate have given the most satisfactory results. The later introductions are now being tested.

*Grapes:* A small vineyard of the new varieties have been planted for comparison with the standard sorts. Several of these new introductions promise to be most valuable. We have continued our experiments in spraying to prevent injuries from various fungous disease. The different methods of pruning and training have also been continued.

*Ginseng:* Our experiment in growing Ginseng is still under way, and will be continued. The plants have made good growth, and a new lot of plants have been collected and set out.

Experiments with new varieties of small fruits and vegetables will be continued.

*Canning:* We have experimented with the different methods of canning the following fruits and vegetables: Corn, beans, squashes, okra, tomatoes, peaches, pears, plums, apples and blackberries. Many small canning factories have been put up in different sections of the State and there seems to be a growing interest in the industry.

*Potatoes:* The following experiments have been conducted and will be continued another year:

Comparison of Northern, Western and Southern grown seed for planting in the South.

Different methods of storing for winter, planting at different depths, mulching and methods of culture.

Comparison of fall, winter and spring planting.

Spraying for leaf blight and treatment to prevent scab.

For two years I have been growing a pea that was found growing wild in the woods a few miles North of the College. I started with one plant and now have sufficient seed to fully test its value as a forage plant. The indications are that it will prove to be a most valuable addition to our leguminous forage plants.

The results of my experiments will be given out at a later date.

Very respectfully,

C. C. NEWMAN,  
Horticulturist.



**The South Carolina Experiment Station in account with  
The United States Appropriation, 1900. 1901.**

DR

To receipts from the Treasurer of  
the United States as per. Approp-  
riation for Fiscal Year ending  
June 30, 1901, as per. Act of  
Congress approved March 2,  
1887.

\$15000 00

CR

By Salaries	Abstract 1	\$ 7788 95
“ Labor	“ 2	2315 56
“ Publication	“ 3	953 22
“ Postage and stationery	“ 4	106 48
“ Freight and Express	“ 5	201 56
“ Heat, Light, Water and Power	“ 6	
“ Chemical Supplies	“ 7	465 72
“ Seeds, Plants and Sun- dry Supplies	“ 8	1057 41
“ Fertilizers	“ 9	91 33
“ Feeding Stuffs	“ 10	272 06
“ Library	“ 11	268 03
“ Tools, Implements and Machinery	“ 12	81 93
“ Furniture and Fixtures	“ 13	52 87
“ Scientific Apparatus	“ 14	99 95
“ Live Stock	“ 15	67 30
“ Travelling Expenses	“ 16	431 49
“ Contingent Expenses	“ 17	15 89
“ Buildings and Repairs	“ 18	730 25
“ Balance		
	<u>Total</u>	<u>\$15000 00</u> <u>\$15000 00</u>

## South Carolina Agricultural Experiment Station. Supplementary Statement.

To receipts from other sources than the United States for the year ended.	Farm Products	Total
	\$783 26	

### CR

By Labor		\$317 60
“ Freight and Expenses		17 42
“ Seeds, Plants and Sundry Supplies		32 76
“ Feeding Stuffs		49 35
“ Buildings and Repairs		310 80
“ Balance		55 33
	\$783 26	\$783 26

We, the undersigned, duly appointed Auditors of the Corporation, do hereby certify that we have examined the books and accounts of the Treasurer of the South Carolina Experiment Station for the fiscal year ending June 30, 1901; that we have found the same well kept and classified as above, and that the receipts for the year from the Treasurer of the United States are shown to have been \$15,000.00, and the corresponding disbursements \$15,000.00; for all of which proper vouchers are on file and have been by us examined and found correct, thus leaving no balance.

And we further certify that the expenditures have been solely for the purposes set forth in the Act of Congress approved March 2, 1887.

Signed :

R. W. SIMPSON,  
Chairman of Auditors.

Attest :

P. H. E. SLOAN,  
Custodian.